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PROCEEDINGS
OF THE
AMERICAN ACADEMY
OF
ARTS AND SCIENCES.
SELECTED FROM THE RECORDS.
VOL. IV.

Four hundred and fortieth meeting.

May 26, 1857. — ANNUAL MEETING.

The PRESIDENT in the chair.

Dr. A. A. Gould, from the Committee on the Library, made the annual report upon the condition of the library.

Professor Lovering, in behalf of the Committee on Publications, made his annual report.

The Treasurer presented his annual report upon the finances of the Academy; which was ordered to be entered in full upon the record-book.

The President read a list of the Fellows, Associate Fellows, and Foreign Honorary Members chosen during the past year. Also a list of those deceased since the last annual meeting, as follows : —

Resident Fellows.

Hon. Samuel Hoar, of Concord.

Hon. Francis C. Gray, of Boston.

Rev. Dr. Ephraim Peabody, of Boston.

Associate Fellow.

Prof. Jacob Whitman Bailey, of West Point.

Foreign Honorary Member.

Dr. Buckland, the late Dean of Westminster.

The vacancies in the list of Foreign Honorary Members were filled by the election of

Professor Mitscherlich, of Berlin, in Class I. Section 3 ;

Professor Hugo von Mohl, of Tübingen, in Class II. Section 2 ;

Jacob Grimm, of Berlin, in Class III. Section 2.

The following gentlemen were elected Fellows of the Academy :—

John D. Runkle, of Cambridge, in Class I. Section 1.

Dr. David Weinland, of Cambridge, in Class II. Section 3.

Moses G. Farmer, of Boston, in Class I. Section 3.

Dr. Charles G. Putnam, in Class II. Section 4.

Professor Gray read the following note in reference to the life and services of the late Professor Bailey :—

“Jacob Whitman Bailey, late Professor of Chemistry, Mineralogy, and Geology in the U. S. Military Academy, West Point, — the only Associate Fellow lost to the Academy by death during the past year, — died on the 27th of February last, at a comparatively early age. He was born on the 29th of April, A. D. 1811, in the township of *Ward*, now Auburn, in this Commonwealth. He was graduated at West Point, in July, 1832, when he received his commission of Second Lieutenant of Artillery. He was promoted to be First Lieutenant in August, 1836, and had charge of an arsenal in Virginia at the time of his appointment, in 1838, to the chair he so long and so worthily filled at West Point, at first as Assistant, and afterwards as principal Professor.

“His public scientific career began in the year 1837, with a communication printed in the *American Journal of Science*, On the Use of Grasshoppers' Legs as a Substitute for Frogs in Galvanic Experiments. Shortly after his removal to West Point, viz. in 1838, he commenced the publication, in the same Journal, of his important series of papers on the *Infusoria*, especially the *Diatomaceæ*, both recent and fossil, being the results of assiduous and long-continued observations on these minute organisms, which ended only with his life, — his latest paper, reporting the results of microscopic examination of the soundings across the Atlantic made in the voyages of the Arctic be-

tween the coast of Ireland and this country, having been published a few days after his lamented death.

“Other important papers on the same class of subjects have appeared in the Smithsonian Contributions to Knowledge. One of his most recent publications was a short paper, showing — contrary to Sir David Brewster’s till then unquestioned statement — that silex in vegetables, as in the rind of the stem of Grasses and Equisetum, does not polarize light, and is not crystalline in structure. The apparent polarization he showed to be due to organic membrane, which had not been entirely removed. It must not be forgotten, moreover, that he was the first to *prove* the vegetable structure of coal (at least of anthracite), which he did in a characteristic way, at once simple and decisive, as may be seen by his paper on the subject in the American Journal of Science.

“Professor Bailey commenced his microscopical observations with simple lenses made by himself of fused globules of glass, using these, as well as better instruments, with extraordinary skill and success. He may justly be regarded as the founder of microscopical research in America, and himself as a model investigator. His published papers are all short, clear, explicit, and unpretending as they are thorough; and every one of them embodies some direct and positive contribution to science.”

The officers of the Academy were elected for the ensuing year as follows :—

JACOB BIGELOW, *President.*
 DANIEL TREADWELL, . . *Vice-President.*
 ASA GRAY, *Corresponding Secretary.*
 SAMUEL L. ABBOT, . . . *Recording Secretary.*
 NATHANIEL B. SHURTLEFF, *Librarian.*
 EDWARD WIGGLESWORTH, *Treasurer.*

Council.

JOSEPH LOVERING,	}	of Class I.
E. N. HORSFORD,		
BENJAMIN A. GOULD, Jr.		
LOUIS AGASSIZ,	}	of Class II.
JEFFRIES WYMAN,		
JOHN B. S. JACKSON,		

JAMES WALKER,	} of Class III.
FRANCIS BOWEN,	
NATHAN APPLETON,	

The President announced the following Standing Committees:—

Rumford Committee.

EBEN N. HORSFORD,	JOSEPH LOVERING,
DANIEL TREADWELL,	HENRY L. EUSTIS,
MORRILL WYMAN.	

Committee of Publication.

JOSEPH LOVERING,	LOUIS AGASSIZ,
CORNELIUS C. FELTON.	

Committee on the Library.

AUGUSTUS A. GOULD,	BENJAMIN A. GOULD, JR.
JOSIAH P. COOKE, JR.	

To Audit the Treasurer's Accounts.

THOMAS T. BOUVÉ,	DR. C. E. WARE.
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Four hundred and forty-first meeting.

August 12, 1857. — STATED MEETING.

The PRESIDENT in the chair.

The Corresponding Secretary read the following letters, viz.: — From Jacob Grimm, Berlin, July 2, accepting his appointment as Foreign Honorary Member; from Dr. Charles G. Putnam and J. D. Runkle, accepting Fellowship; from the Linnæan Society, London, November 25, 1856, Royal Geographical Society, London, November 29, 1856, Académie Royale des Sciences à Amsterdam, January 5, 1857, Die Königl. Sächsische Bergakademie, Freiberg, January 19, 1857, Kaiserlich-Königliche Geologische Reichsanstalt, Wien, January 21, 1857, Corporation of Harvard College, March 10,